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NRCS

United States Department of Agriculture

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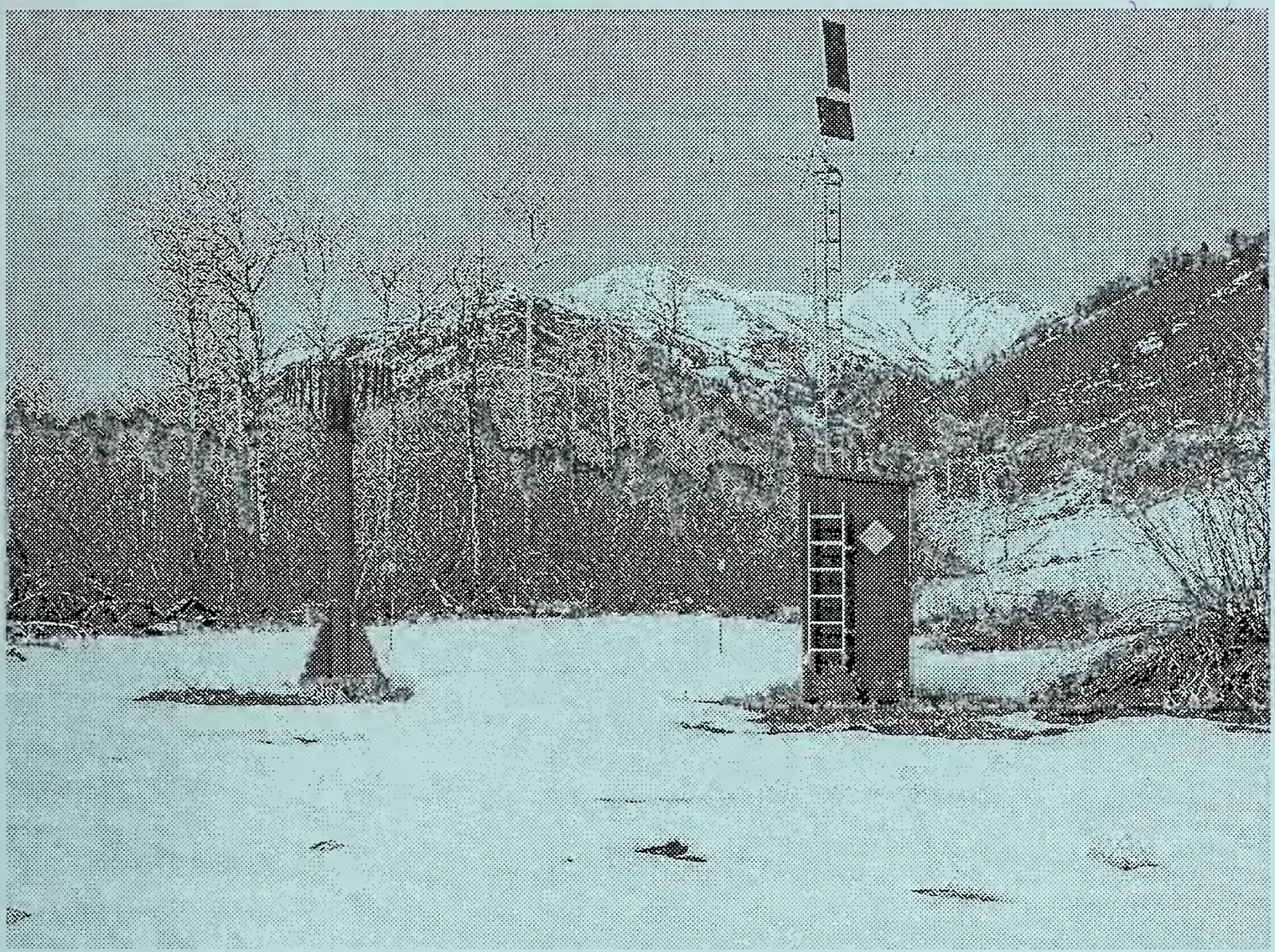
Idaho Water Supply Outlook Report April 1, 2004



Garfield Ranger Station SNOTEL site located in the Little Wood Basin at an elevation of 6,560 feet.

After an unusually warm and dry March, many SNOTEL sites across the state suffered large decreases in snow water equivalent due to an early melt season. On March 1st, 2004 the SNOTEL site shown above measured 10.4 inches of water (116% of average) and it currently measures only 5.6 inches (55% of average). Nearly 5 inches of snow water melted from this site in March, whereas for an average year this site normally increases by 1.2 inches of snow water during March.

Photograph taken by James Montesi on March 30, 2004

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Internet Web Address
http://www.id.nrcs.usda.gov/snow/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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IDAHO WATER SUPPLY OUTLOOK REPORT

April 1, 2004

SUMMARY

Mother Nature traded her snowshoes for sandals in March, skipping mud season. A dry month with above normal temperatures typical of mid-May deteriorated Idaho's snowpack and decreased streamflow forecasts across the state. Snow water equivalent amounts peaked in mid-March, two to three weeks earlier than average. Low elevation snow that lingered in the valleys all winter due to the lack of a mid-winter thaw, finally melted. Mid-elevation snow is melting, and higher elevation snowpacks even started melting in March which is very unusual. The worst news may be the lack of accumulation of snow in higher elevations during March. Many mid-elevation snowpacks were average or better and could afford some melt, but high elevation snowpacks were barely average and the lack of snow in March knocked these snow zones to below normal levels. In some basins, snow water equivalent is less than the amounts recorded the past two years. These snow zones are the critical water producing zones to sustain Idaho's streamflow in the later spring and summer months. The premature snow melt and lack of March moisture will be felt later this summer with stream baseflows occurring earlier and below normal after the snowmelt peaks occur.

If the Owyhee basin is an indication of water losses that can occur from a melting snowpack, users in other southern Idaho river basins should be planning for reduced streamflows, especially if spring precipitation does not materialize. The Owyhee basin snowpack decreased from 155% of average March 1 to 71% April 1 and streamflow was only 127% of the March average for the Owyhee River near Rome. Streamflow forecasts range from a low of 7% of average in the Bear River to 80% in the Panhandle, Clearwater and Henrys Fork. Elsewhere, forecasts are for 45-75% of average. Irrigation water shortages are expected across central, southern and eastern Idaho with the most severe shortages in 70 years for Bear Lake water users.

SNOWPACK

An early winter that looked promising to help southern Idaho from another drought year, is also ending early and will push Idaho into another year of poor water supplies. Currently, snowpacks vary across the state depending upon the melt, and are generally about 80% of average across most of the state, 70% in the Wood and Lost basins and 67% in Bear River. Nearly all of this water year's precipitation fell as snow, resulting in very dry soils under healthy looking snowpacks. Many snow measuring stations recorded their greatest loss or lowest gain of snow water during March. Usually the snowpack continues accumulating in March, while April can be a gaining month or losing month depending upon current weather. However, the combination of warm temperatures and lack of precipitation in March deteriorated this year's snowpack and resulting water supply.

PRECIPITATION

March precipitation was the highest in the Clearwater basin at 71% of average and Panhandle Region at 59%. The lowest amounts fell in central Idaho in the Wood and Lost basins at 29% of average. Two SNOTEL sites received only 11% and 18% of their normal March amounts: Hilts Creek, in the Big Lost basin, and Chocolate Gulch in the Big Wood basin, respectively. Other basins in the state received 40-50% of average precipitation during March. Water year to date precipitation also decreased and now ranges from 82-96% of average across the state and is less than last year in the Panhandle, Clearwater, Salmon, Weiser, Payette, Boise, Wood and Lost basins. It may be hard to believe, but water year to date precipitation is the same as last year in the Upper Snake and Bear basins, and about one-third greater than last year in the basins south of the Snake River.

RESERVOIRS

Reservoir storage did not increase as much as one would expect based on the amount of snow lost during March. Reservoir storage is average or better in Brownlee, Little Wood, Boise and Payette reservoir systems, Dworshak and Idaho Panhandle except for Pend Oreille Lake which is 75% of average. Henrys, Island Park, Grassy and American Falls reservoirs are about 65-75% full. Owyhee and Mackay reservoirs are half full. Palisades and Jackson Lake have a combined storage of 35% full. Magic Reservoir is 25% full, Oakley is 20% full, Salmon Falls is 15% full, Bear Lake is 13% full, and Blackfoot is 11% full.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

The water supply forecasts mentioned in this report are the 50% Chance of Exceedance Forecasts, which means there is 50% chance the flow may be greater or less than that volume. Because of the cumulative drought effects, current dry weather pattern, and observed inefficiencies of the snow to produce streamflow in the Owyhee basin due to dry soils, water users should evaluate their risks using the 70% and 90% (reasonable minimum) Chance of Exceedance Forecasts. In addition, with this being the fourth or fifth consecutive drought year, which is unprecedented in some basins, it may be difficult for the streamflow forecasts equations to gage the dryness of the landscape. Some streamflow forecasts were adjusted to the dry side that do not have fall streamflow variables to account for the dry soils, wetlands and springs.

With the remaining snowpack similar to last year's, it is unlikely that this year's snow will produce as much runoff as last year's unless weather patterns change to more favorable conditions, cooler and wetter. Last year, a cool spring kept the snow in the high country until late May, and when record high temperatures occurred, the snow melted rapidly and efficiently to produce streamflow. Runoff volumes would not have been as great without this scenario of a delayed melt combined with record high temperatures to melt the snow at rates that exceeded soil infiltration rates.

RECREATION

River runners better have their boats ready. Snow water contents peaked around March 10, nearly a month early, which means the streams may peak in early May rather than late May or early June, if the current weather conditions continue. The Owyhee River near Rome peaked March 21 at 15,000 cfs. The remaining April 1 snow is 71% of average in the Owyhee basin, and sounds promising, but is not enough to generate a higher peak without rain. Residual streamflow forecasts are for 55-65% of average in the Owyhee basin. The Bruneau River forecast dropped like the snowpack and is now at 67% of average. The Bruneau River will rise again but the magnitude and timing of the peak depends upon future temperatures and precipitation. Precipitation in the central mountains was only 30% of average in March, and as a result the Middle Fork Salmon River forecast decreased to 63% of average. The main Salmon River at White Bird is forecast at 77% of average. The Selway, Locsha and St. Joes rivers are forecast at 80% of average. Timing and magnitude of snowmelt streamflow peaks depend on spring precipitation and temperatures. Water users and river runners should expect streamflows to decrease to baseflow levels earlier than normal and remain below normal the rest of the summer because of the lack of mountainous snow to sustain streamflows during the typical dry summer months in Idaho.

OTHER INFORMATION

NRCS will post provisional streamflow forecasts by the second working day of each month, under "Quick Glance Idaho Forecast Listing (current year)" on this web page: http://www.id.nrcs.usda.gov/snow/watersupply/ This link will be updated with the most current forecasts until they are finalized. The complete, monthly Water Supply Outlook Report is also available.

NRCS has posted a Drought and Surface Water Supply Index web page at:
http://www.id.nrcs.usda.gov/snow/watersupply/swsi-main.html
Numerous graphs are available for users to access for their basin of interest.

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of April 1, 2004

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

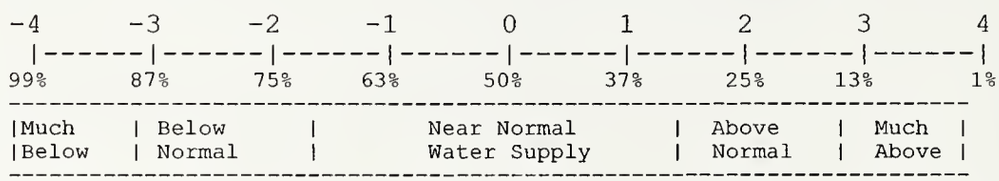
SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Dept. of Water Resources
PacifiCorp

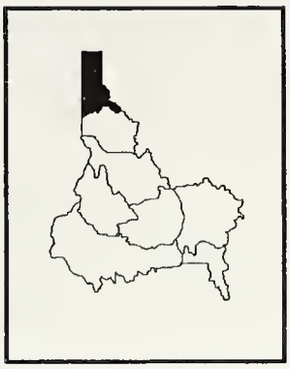
BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-1.7	1998	NA
CLEARWATER	-1.9	1983	NA
SALMON	-1.0	2000	NA
WEISER	-1.7	2000	NA
PAYETTE	-1.5	2002	NA
BOISE	-1.7	2002	-2.1
BIG WOOD	-1.7	2003	-1.0
LITTLE WOOD	-1.7	2000	-2.0
BIG LOST	-1.5	2000	-0.5
LITTLE LOST	-2.7	2003	0.0
HENRYS FORK	-1.5	1991	-3.3
SNAKE (HEISE)	-2.7	2003	-2.0
OAKLEY	-1.7	2002	-1.0
SALMON FALLS	-2.0	1981	-1.0
BRUNEAU	-1.2	2002	NA
BEAR RIVER	-3.9	2003	-3.8

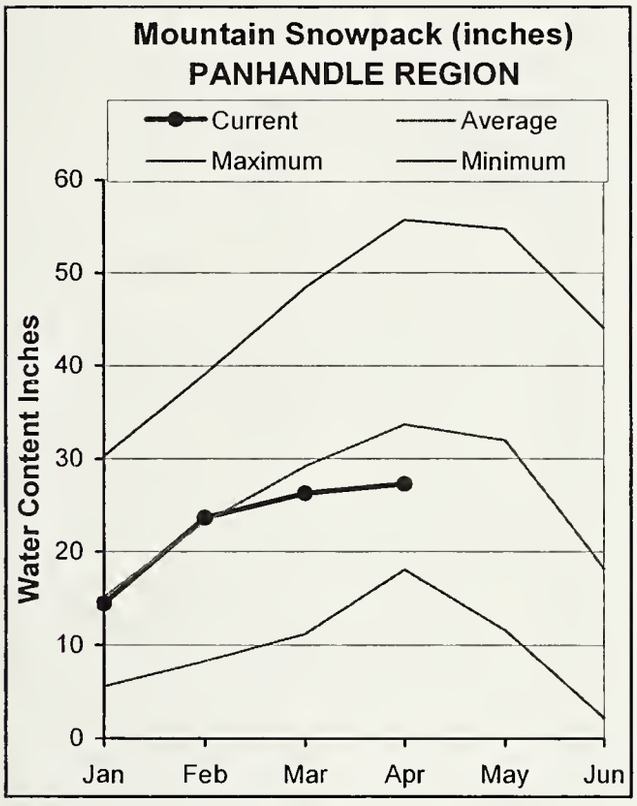
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

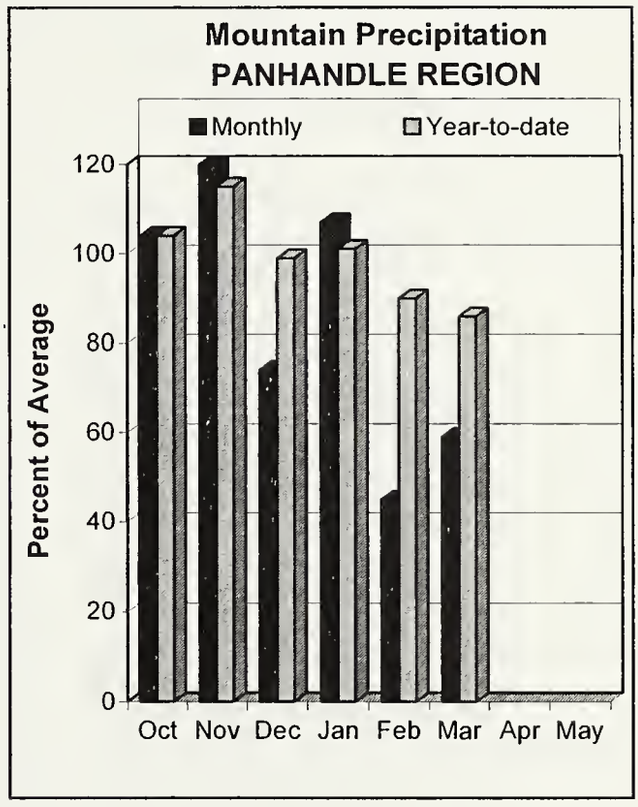


Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION
APRIL 1, 2004







WATER SUPPLY OUTLOOK

March precipitation followed February's trend and was below average at only 59% of average. Water year to date precipitation is 86% of average, slightly less than last year. Snowpack percentages decreased 10-20 percentage points from last month and are now about 80% of average for most basins. The Priest River hosts the highest snowpack at 90% of average. Water storage amounts vary from 75-130% of average in the lakes and reservoirs in northern Idaho and western Montana. Streamflow forecasts decreased for the second month in a row. This year, streamflow forecasts started out above average in January and February, but decreased to about 90% of average on March 1. Forecasts are now 75-85% of average. A dry spring means that even less water will runoff and reach the streams. Water supplies should be adequate for the numerous users, but users should expect an earlier than normal melt, runoff and peak flow and below normal stream levels later this summer if warm temperatures continue.

PANHANDLE REGION
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	4920	5550	5830	83	6110	6740	7040
	APR-SEP	5150	6240	6730	83	7220	8310	8120
MOYIE RIVER at Eastport	APR-JUL	275	305	325	80	345	375	405
	APR-SEP	280	315	335	80	355	390	420
SMITH CREEK	APR-JUL	82	95	104	85	113	126	123
	APR-SEP	83	98	108	84	118	133	129
BOUNDARY CREEK	APR-JUL	82	95	103	84	111	124	123
	APR-SEP	85	98	107	83	116	129	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	6040	7700	8450	75	9200	10860	11300
	APR-SEP	6700	8520	9350	75	10180	12000	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	7200	8420	9250	73	10080	11300	12700
	APR-SEP	7860	9190	10100	73	11010	12340	13900
PRIEST near Priest River (1,2)	APR-JUL	515	605	645	79	685	775	815
	APR-SEP	465	615	685	79	755	900	870
COEUR D'ALENE at Enaville	APR-JUL	440	525	585	79	645	730	740
	APR-SEP	465	555	615	79	675	765	780
ST. JOE at Calder	APR-JUL	720	825	895	79	965	1065	1140
	APR-SEP	760	870	940	78	1010	1120	1200
SPOKANE near Post Falls (2)	APR-JUL	1470	1750	1940	76	2130	2410	2550
	APR-SEP	1530	1820	2020	76	2220	2510	2650
SPOKANE at Long Lake (2)	APR-JUL	1640	1980	2210	78	2440	2780	2850
	APR-SEP	1810	2170	2410	79	2650	3010	3070

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2456.0	2355.0	1886.7
FLATHEAD LAKE	1791.0	649.3	1145.0	738.5
NOXON RAPIDS	335.0	316.9	327.2	272.9
PEND OREILLE	1561.3	570.8	894.9	763.6
COEUR D'ALENE	238.5	160.5	211.5	169.5
PRIEST LAKE	119.3	63.2	83.7	65.5

PANHANDLE REGION
Watershed Snowpack Analysis - April 1, 2004

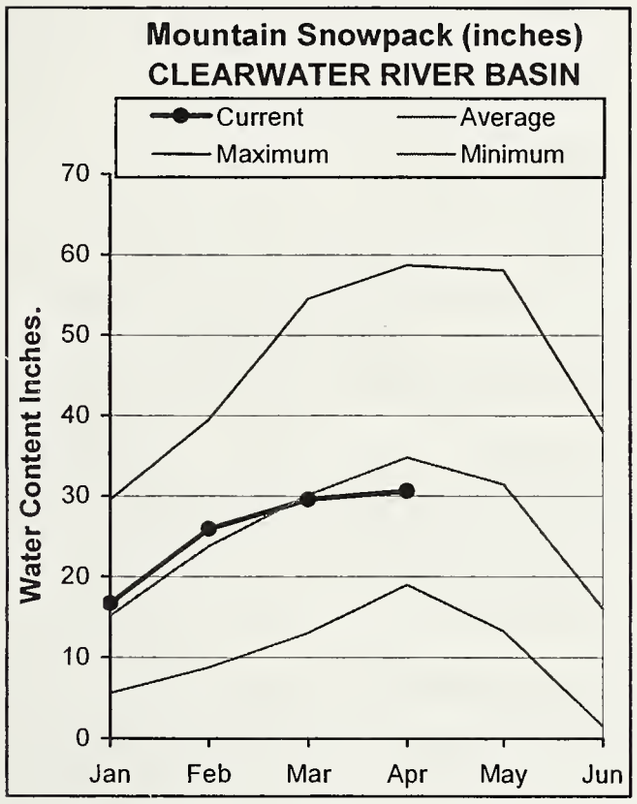
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	36	98	83
Moyie River	9	102	86
Priest River	5	101	90
Pend Oreille River	104	87	80
Rathdrum Creek	2	140	75
Hayden Lake	0	0	0
Coeur d'Alene River	8	124	81
St. Joe River	6	114	82
Spokane River	12	124	80
Palouse River	2	229	84

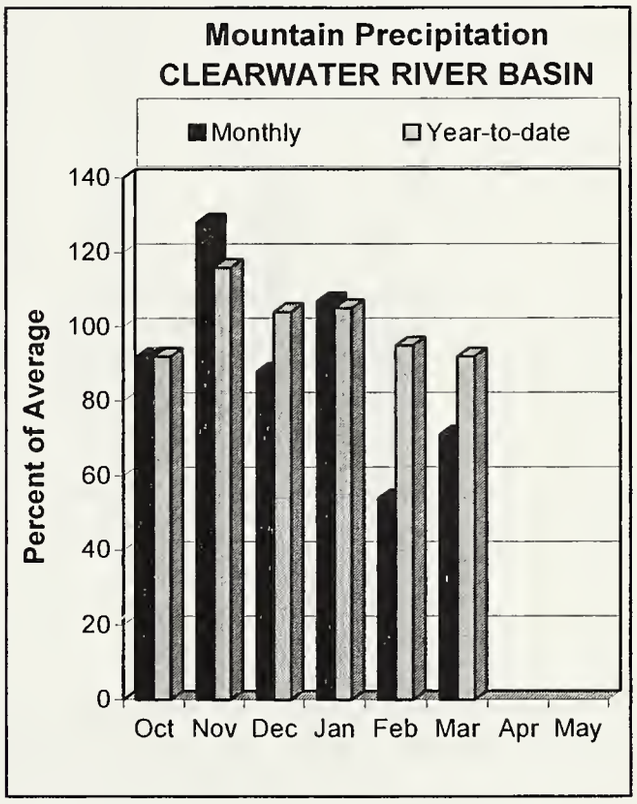
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN
APRIL 1, 2004





WATER SUPPLY OUTLOOK

March precipitation was 71% of average, the highest in the state, but nothing to brag about when it follows a month that was only about half of average. Water year to date precipitation is 92% of average, about 10% less than last year. Snowpack percentages decreased from 93-99% of average last month to 83-88% on April 1. The North Fork Clearwater basin now hosts the highest snowpack at 88% of average, the lowest is the Lochsa basin at 83%, while the Selway basin is at 84%. The April 1 snowpack is less than the past two years, but better than 2001 when the snow was about half of average. The net change in snow water for the 13 SNOTEL sites in the basin from March 1 to April 1 was the third worst since 1961. The lowest years were 1992 when these sites actually lost 21 inches of snow water, and 1978 that had a minimal gain of 7 inches. This year these sites only gained 13 inches of snow water during March while normally the average gain is 64 inches of snow water. Luckily, the snowpack was near average on March 1 otherwise these losses would be much more severe. Streamflow forecasts reflect these conditions and declined to 80% of average for these Clearwater River basin streams. With near average precipitation this spring, streamflow runoff volumes will be less than the past two years but better than 2001 which was the tenth lowest since 1926 for the Clearwater River near Spalding.

CLEARWATER RIVER BASIN
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SELWAY near Lowell	APR-JUL	1440	1580	1680	82	1780	1920	2060
	APR-SEP	1520	1670	1780	82	1890	2040	2170
LOCHSA near Lowell	APR-JUL	1090	1200	1270	83	1340	1450	1530
	APR-SEP	1140	1250	1330	83	1410	1520	1610
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1530	1960	2150	81	2340	2770	2640
	APR-SEP	1660	2090	2280	81	2470	2900	2800
CLEARWATER at Orofino (1)	APR-JUL	2460	3330	3730	80	4130	5000	4650
	APR-SEP	2660	3530	3930	80	4330	5200	4900
CLEARWATER at Spalding (1,2)	APR-JUL	4230	5450	6010	81	6570	7790	7430
	APR-SEP	4560	5780	6340	81	6900	8120	7850

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2371.2	3117.2	2205.4

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - April 1, 2004

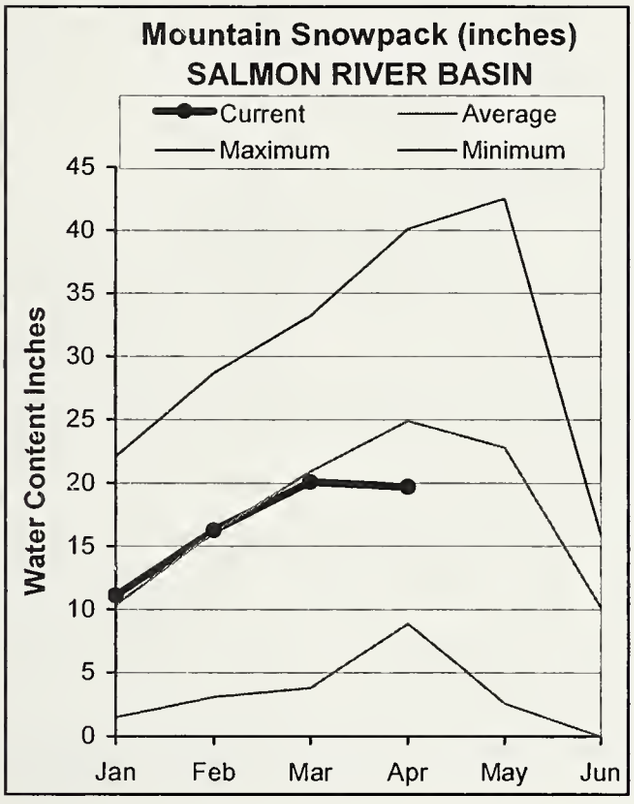
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	95	88
Lochsa River	4	74	83
Selway River	6	74	84
Clearwater Basin Total	19	87	85

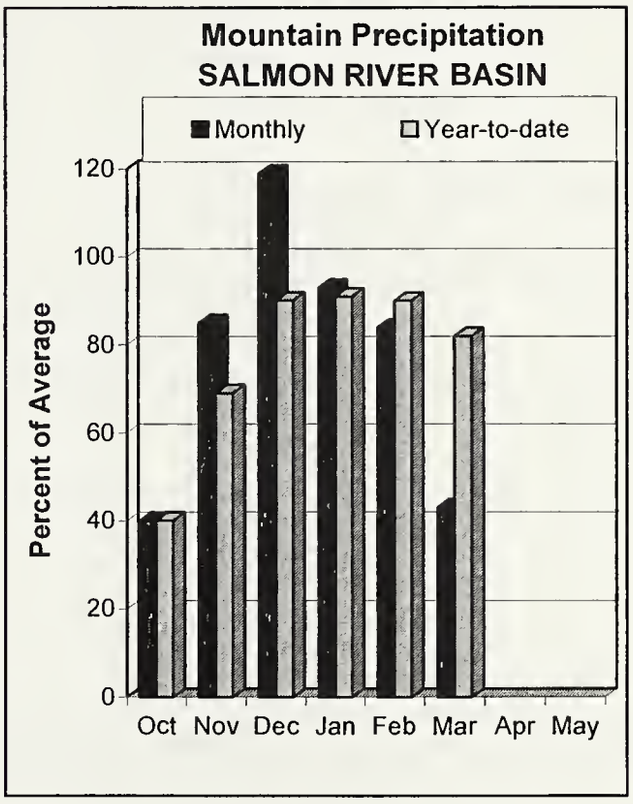
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN
APRIL 1, 2004





WATER SUPPLY OUTLOOK

March precipitation was only 43% of average, ranging 25-60% across the basin. The lowest amounts were around 30% of average in the central mountains and east to the Montana border. Water year to date precipitation is 82% of average, less than last year at this time. Snowpack percentages took a turn for the worse and decreased 18-24 percentage points from a month ago. Current snowpack percentages are 70% of average in the Middle Fork Salmon, Lemhi and Salmon headwaters increasing to 79% in the South Fork Salmon and to 87% in the Little Salmon basins. Overall, the Salmon basin snowpack is 77% of average, down from 96% a month ago. The Middle Fork Salmon basin suffered its biggest loss in snow water between March 1 and April 1 for the period of record that starts in 1961. Other years that also experienced losses were 1969, 1970 and 1992, but none were as great as the 7 inches of snow water that was lost at this three station snow index. On average, these three sites gain 13 inches of snow water during March. As a result, streamflow forecasts mirror the deteriorating snow conditions and call for only 41% of average in the Lemhi basin, 62% in the Middle Fork Salmon River, 69% in the headwaters of the Salmon River, and increase to 77% for the Salmon River at White Bird. As a result of the dramatic change in the weather, streamflows for the Salmon River are projected at similar volumes as the past two seasons, but still better than 2001 which was one of the lowest runoff years for the period of record.

SALMON RIVER BASIN
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	280	495	590	69	685	900	855
	APR-SEP	380	595	690	69	785	1000	1000
Lemhi River nr Lemhi	APR-JUL	21	29	35	41	42	53	86
	APR-SEP	24	35	43	41	52	68	105
MF Salmon at MF Lodge	APR-JUL	352	431	490	62	552	651	785
	APR-SEP	396	485	550	63	620	729	875
SALMON at White Bird (1)	APR-JUL	3140	4100	4530	77	4960	5920	5850
	APR-SEP	3630	4590	5020	78	5450	6410	6480

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - April 1, 2004

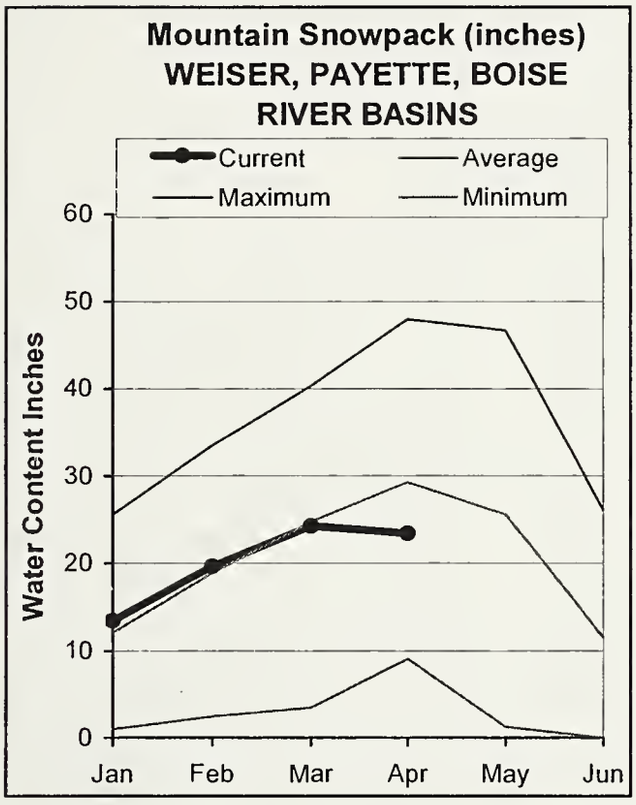
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	11	72	69
Lemhi River	11	79	71
Middle Fork Salmon River	3	72	69
South Fork Salmon River	3	81	79
Little Salmon River	4	88	87
Salmon Basin Total	32	77	77

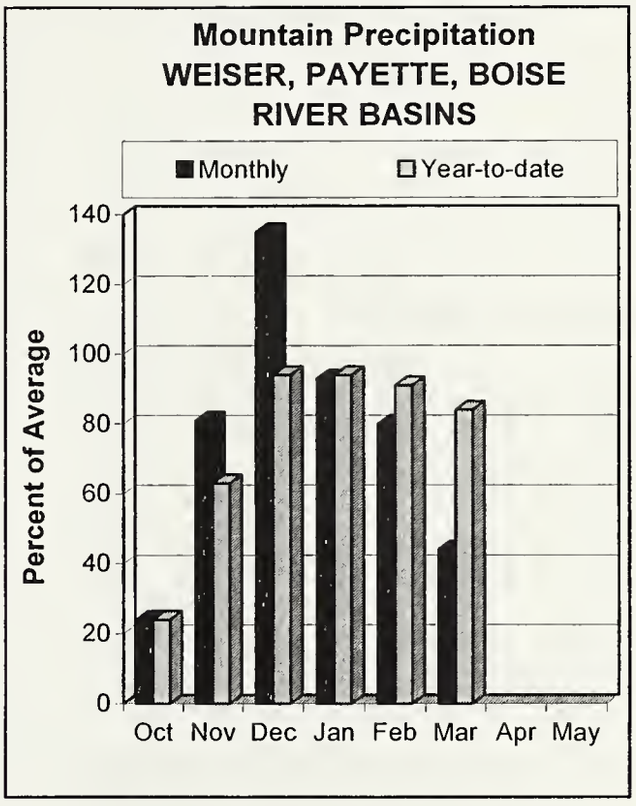
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS APRIL 1, 2004





WATER SUPPLY OUTLOOK

Monthly precipitation continued its decline from 80% of average in February to only 44% in March. Actual amounts varied ranging from 20% of average, the lowest along the Big Wood basin divide, to 70% of average at a few isolated SNOTEL sites. Water year to date precipitation is 84% of average, less than last year. Snowpack percentages decreased 17-27 percentage points from last month and now range from 71% of average in the South Fork Boise Basin to 95% in Mores Creek. The Weiser basin snowpack is 76% of average and Payette basin is 86%. This year is one of only four years since 1961 that the Payette and Boise basin has the same or less snow water on April 1 when compared to March 1. Several snow sites had record losses of snow water in March. Reservoir storage came up as a result of the snowmelt and is now slightly above average in the Payette and Boise reservoir systems. However, much more critical, is the amount of decrease in streamflow forecasts. The Payette River near Horseshoe Bend is now forecast at 71% of average, down from 95% last month. The Weiser River is forecast at 69% of average, down from 93%. The Boise River near Boise is forecast at 69% of average down from 92%. Water users in the Boise basin should have adequate supplies based on these forecasts and similar to 2002, but if future precipitation remains below average supplies will be marginally adequate.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER near Weiser (1)	APR-SEP	115	235	290	69	345	465	420
SF PAYETTE at Lowman	APR-JUL	270	305	330	75	355	390	440
	APR-SEP	305	350	375	76	400	445	495
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	72	89	97	72	105	122	134
	APR-SEP	78	95	103	73	111	128	142
LAKE FORK PAYETTE near McCall	APR-JUL	57	65	70	82	75	83	85
	APR-SEP	60	68	73	82	78	86	89
NF PAYETTE at Cascade (1,2)	APR-JUL	255	335	370	76	405	485	490
	APR-SEP	280	360	395	75	430	510	530
NF PAYETTE nr Banks (2)	APR-JUL	345	420	470	73	520	595	645
	APR-SEP	365	450	505	73	560	645	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	850	1060	1150	71	1240	1450	1610
	APR-SEP	880	1130	1250	71	1370	1620	1750
BOISE near Twin Springs (1)	APR-JUL	365	450	485	76	520	605	635
	APR-SEP	405	490	525	76	560	645	690
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	245	315	350	65	385	455	540
	APR-SEP	265	335	370	64	405	475	580
MORES CREEK near Arrowrock Dam	APR-JUL	49	64	75	57	86	101	131
	APR-SEP	51	67	78	57	89	105	137
BOISE near Boise (1,2)	APR-JUN	705	820	870	69	920	1040	1260
	APR-JUL	675	880	970	69	1060	1270	1410
	APR-SEP	755	960	1050	69	1140	1350	1530

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	8.9	10.0	8.8
CASCADE	693.2	457.7	514.2	428.8
DEADWOOD	164.0	86.6	64.7	91.6
ANDERSON RANCH	450.2	310.6	165.8	262.8
ARROWROCK	272.2	126.9	232.5	204.5
LUCKY PEAK	293.2	209.6	140.1	162.6
LAKE LOWELL (DEER FLAT)	165.2	135.7	86.5	126.9

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	115	77
Weiser River	5	95	76
North Fork Payette	8	93	89
South Fork Payette	5	89	81
Payette Basin Total	14	91	86
Middle & North Fork Boise	5	94	79
South Fork Boise River	9	84	71
Mores Creek	5	129	95
Boise Basin Total	16	96	77
Canyon Creek	2	171	57

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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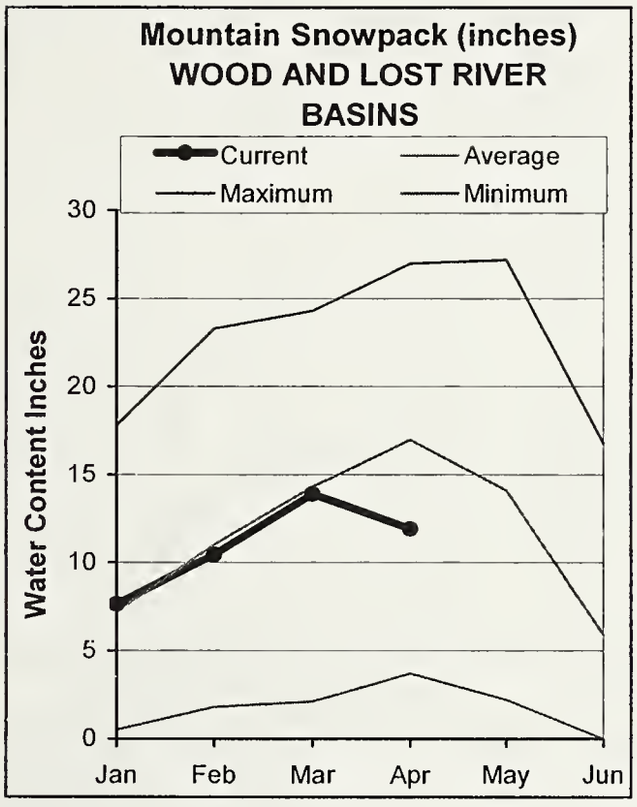
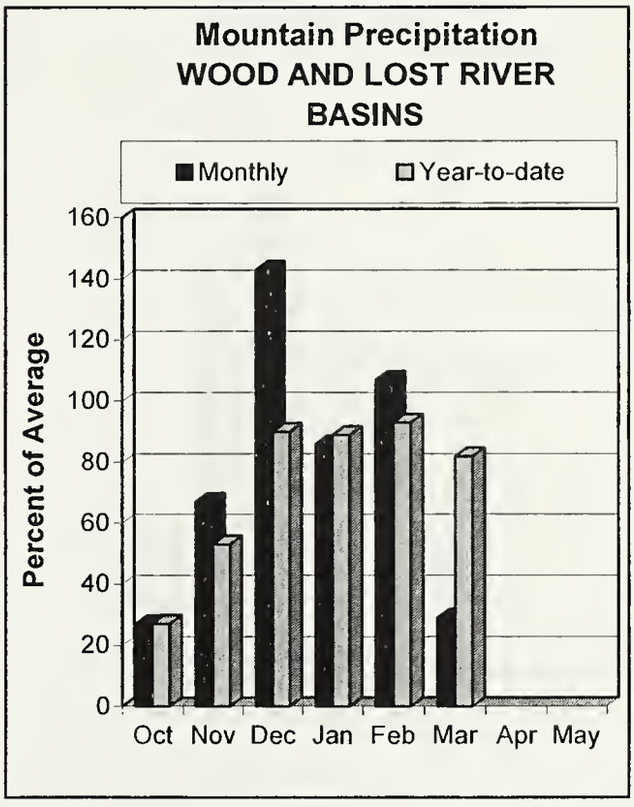
WOOD and LOST RIVER BASINS
APRIL 1, 2004





WATER SUPPLY OUTLOOK

Mother Nature skipped March in the Wood and Lost basins and jumped into spring. March precipitation was 29% of average, ranging from 45% near the Montana border to less than 20% at Hilts Creek and Chocolate Gulch SNOTEL sites. Lack of moisture combined with above normal temperatures melted much of the lower and mid-elevation snow at a record pace during March. Many snow measuring stations recorded their greatest loss of snow water from March 1 to April 1. Snowpack percentages currently range from low to high: 45% of average in Camas and Fish basins; 62% in Little Wood; 75% in Big Wood above Hailey, Big Lost, Little Lost, Birch and Medicine Lodge basins; and 89% in Camas-Beaver basins. Reservoir storage increased, but not as much as many would expect based on the amount of snow lost. Little Wood Reservoir is 3/4 fuli, Mackay Reservoir is half full, and Magic Reservoir is 1/4 full. Streamflow forecasts decreased and now call for 44% of average for Magic Reservoir inflow, 50% for Little Wood, 55% for Little Lost and 62% for Big Lost rivers. These forecasts may be optimistic because the cumulative drought effects on soil moisture, springs, wetlands and aquifers are hard to correlate with how dry the landscape is and the amount of snowmelt water that may reach the streams. Irrigation shortages will occur for Magic, Mackay, Little Lost, and be marginally adequate for Little Wood water users. Water shortages will be more severe if the minimum forecasts occur which are possible if future precipitation stays below normal.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	96	132	151	59	171	219	255
	APR-SEP	109	151	172	59	194	249	290
BIG WOOD near Bellevue	APR-JUL	31	51	68	36	87	119	188
	APR-SEP	34	55	72	36	91	124	200
CAMAS CREEK near Blaine	APR-JUL	26	35	43	43	51	65	100
	APR-SEP	26	35	43	43	51	65	101
BIG WOOD below Magic Dam (2)	APR-JUL	42	93	128	44	163	213	290
	APR-SEP	45	99	135	44	171	226	305
LITTLE WOOD R ab High Five Ck	APR-JUL	24	32	38	49	44	55	78
	APR-SEP	27	36	42	49	49	60	85
LITTLE WOOD near Carey (2)	APR-JUL	24	37	45	52	53	66	87
	APR-SEP	27	40	49	52	58	71	94
BIG LOST at Howell Ranch	APR-JUN	55	72	83	62	94	111	134
	APR-JUL	68	91	106	62	121	144	172
	APR-SEP	79	104	122	62	140	165	197
BIG LOST below Mackay Reservoir (2)	APR-JUL	49	72	88	62	104	127	142
	APR-SEP	63	89	107	62	125	151	173
LITTLE LOST blw Wet Creek	APR-JUL	10.8	14.9	17.9	58	21	25	31
	APR-SEP	11.0	17.0	21	54	25	31	39

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	47.7	36.7	107.1
LITTLE WOOD	30.0	23.2	18.6	19.4
MACKAY	44.4	23.6	21.0	32.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - April 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	80	76
Camas Creek	5	78	44
Big Wood Basin Total	13	80	68
Fish Creek	3	82	45
Little Wood River	9	80	62
Big Lost River	7	85	73
Little Lost River	4	111	73
Birch-Medicine Lodge Cree	4	107	76
Camas-Beaver Creeks	4	134	89

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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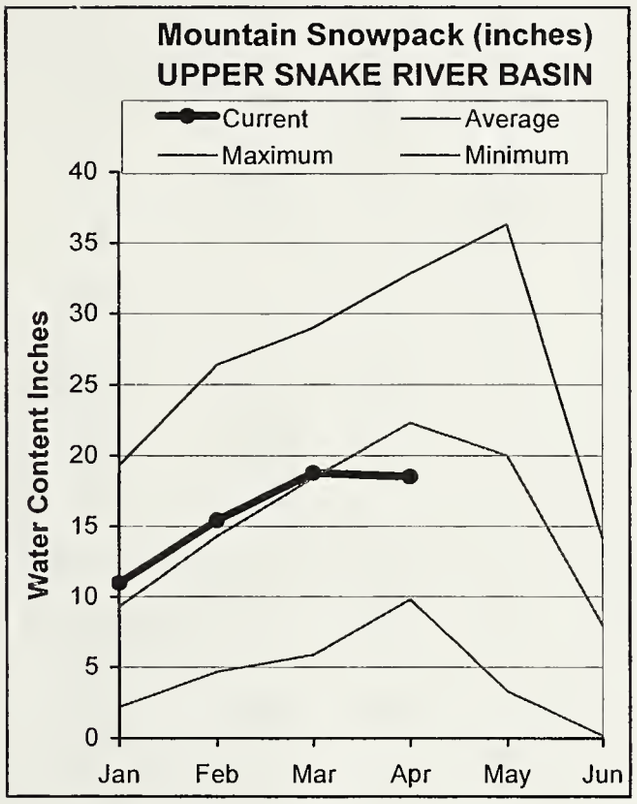
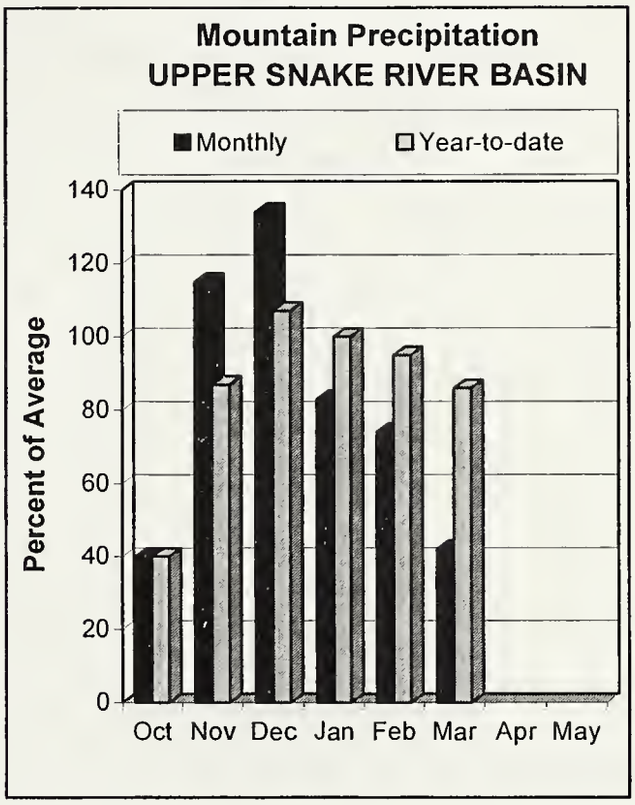
UPPER SNAKE RIVER BASIN
APRIL 1, 2004





WATER SUPPLY OUTLOOK

Mountainous March precipitation was only 42% of average, ranging from 30% in Yellowstone National Park, near record low, to 65% in the higher elevations around Pocatello. Water year to date precipitation is 86% of average which is about the same as last year at this time. Snowpack percentages decreased by 15-45 percentage points and are now less than last year except in the Henrys Fork, Willow and Portneuf basins. Snowpacks are 88% of average in the Henrys Fork, 82% in the Teton and Snake above Jackson Lake, and 73% in the Gros Ventre, Hoback, Greys, and Salt basins in Wyoming. The snowpack for the Snake above Palisades is 77% of average. The snowpack in the lower elevation drainages decreased the most and is now 64% in Blackfoot, 78% of average in Willow, and 87% in Portneuf basins. Overall, the Snake River snowpack above American Falls is 80% of average, slightly less than last year. Many snow measuring stations recorded their greatest loss or lowest gain of snow water during March. Usually, the snowpack accumulates in March, however, the combination of warm temperatures and lack of precipitation deteriorated this year's snowpack and resulting water supply. Reservoir storage hardly improved during March based on the amount of snow loss that occurred. Combined storage in Palisades and Jackson was 31% full a month ago and is now 35% full. Blackfoot Reservoir is 11% full, 17% of average and is the lowest March 31 storage since 1920. American Falls only filled to 75% of capacity, and is the lowest March 31 storage since 1977. Streamflow forecasts decreased significantly from last month and now range from 55-75% of average for most streams, except the Henrys Fork and Falls rivers at 82%. The Snake River near Heise is forecast at 72% of average, slightly better than last year. Water users for the mainstem Snake should be prepared for shortages depending on your water right. With help from Mother Nature and some precipitation this spring, water supplies will be similar to last year.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	385	430	460	81	490	535	570
	APR-SEP	530	585	620	81	655	710	765
HENRYS FORK near Rexburg (2)	APR-JUL	1040	1180	1270	81	1360	1500	1560
	APR-SEP	1380	1530	1640	82	1750	1900	2010
FALLS near Squirrel (1,2)	APR-JUL	255	300	320	83	340	385	385
	APR-SEP	310	355	375	83	395	440	450
TETON near Driggs	APR-JUL	95	115	129	78	143	163	165
	APR-SEP	121	146	163	78	178	203	210
TETON near St. Anthony	APR-JUL	250	300	330	82	360	410	405
	APR-SEP	305	360	395	82	430	485	480
SNAKE near Moran (1,2)	APR-SEP	555	650	695	77	740	835	905
PACIFIC CREEK at Moran	APR-SEP	103	121	133	75	145	163	178
SNAKE above Palisades (2)	APR-JUL	1600	1730	1820	77	1910	2040	2370
	APR-SEP	1820	1980	2090	77	2200	2360	2730
GREYS above Palisades	APR-JUL	157	186	205	60	224	251	340
	APR-SEP	186	218	240	61	260	295	395
SALT near Etna	APR-JUL	131	173	198	58	223	263	340
	APR-SEP	165	215	245	58	275	325	420
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	1920	2240	2390	72	2540	2860	3330
	APR-SEP	2240	2610	2780	72	2950	3320	3870
SNAKE near Heise (2)	APR-JUL	2150	2390	2550	72	2710	2950	3560
	APR-SEP	2510	2790	2980	72	3170	3450	4160
WILLOW CREEK nr Ririe (2)	APR-JUL	26	34	41	51	48	60	81
BLACKFOOT RESV INFLOW	APR-JUN	37	57	71	59	85	105	120
SNAKE nr Blackfoot (1,2)	APR-JUL	2640	3160	3400	74	3640	4160	4600
	APR-SEP	3390	3910	4150	74	4390	4910	5620
PORTNEUF at Topaz	APR-JUL	34	42	48	59	54	62	81
	APR-SEP	43	52	59	59	66	75	100
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	795	1530	1860	57	2190	2930	3240
	APR-SEP	945	1680	2010	57	2340	3080	3510

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	71.4	71.0	85.5
ISLAND PARK	135.2	92.9	98.8	114.6
GRASSY LAKE	15.2	10.0	12.9	12.3
JACKSON LAKE	847.0	185.3	294.8	486.6
PALISADES	1400.0	608.0	628.6	941.5
RIRIE	80.5	33.0	39.0	41.6
BLACKFOOT	348.7	39.5	77.7	229.8
AMERICAN FALLS	1672.6	1250.4	1349.4	1443.2

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	12	116	89
Teton River	8	95	82
Henrys Fork above Rexburg	20	108	87
Snake above Jackson Lake	9	91	82
Gros Ventre River	3	77	72
Hoback River	5	82	72
Greys River	5	81	75
Salt River	5	80	73
Snake above Palisades	29	84	77
Willow Creek	7	110	78
Blackfoot River	5	87	64
Portneuf River	7	165	87
Snake abv American Falls	51	97	80

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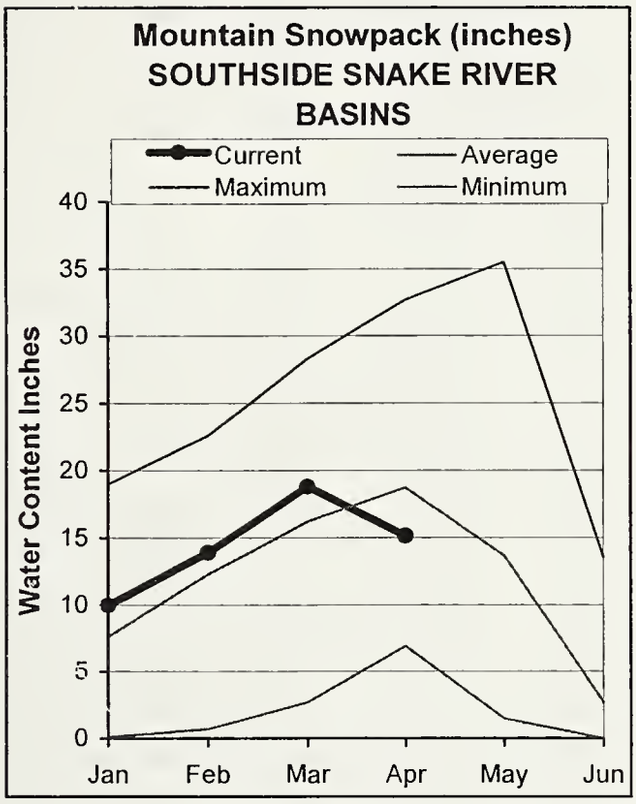
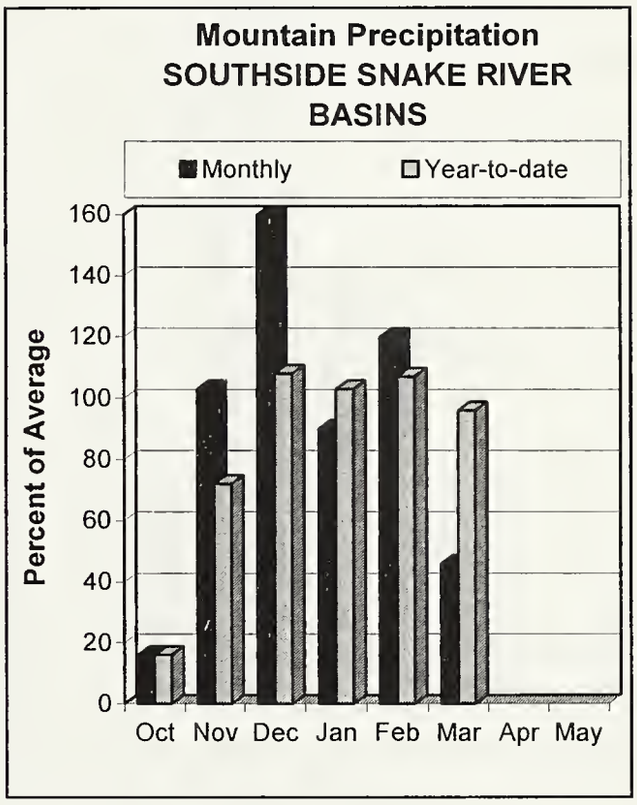
SOUTHSIDE SNAKE RIVER BASINS
APRIL 1, 2004





WATER SUPPLY OUTLOOK

The stage was set in the Owyhee basin with a snowpack that was 155% of average on March 1. However, after that, precipitation was only 46% of average in these basins south of the Snake River and moderate temperatures gradually melted the snow, allowing it to soak into the ground. Water year to date precipitation is 96% of average, better than last year, but nothing to brag about. Because nearly all of this water year's precipitation fell as snow, it left very dry soils under this year's healthy-looking snowpack. If the Owyhee basin is an indication of the losses of melt water that can occur, users in the Bruneau, Salmon Falls and Oakley should be planning for reduced streamflows, especially if spring precipitation does not materialize. The Owyhee River near Rome peaked March 21 at 15,000 cfs and a volume of 257,000 acre-feet (af) for the month, 127% of average. The Owyhee Reservoir increased from 121,800 af to 387,200 af, 54% full. April 1 snow is 71% of average in the Owyhee basin, and sounds promising, but is not enough to generate a higher peak without rain. Residual streamflow forecasts are for 55-65% of average. The Bruneau and Salmon Falls rivers will rise again; the timing and magnitude of peaks depend upon future temperatures and precipitation. The remaining snowpack decreases from west to east with the Raft basin at 106% of average, Oakley at 95%, Salmon Falls at 76% and Bruneau at 68%. Salmon Falls, Oakley, and Wildhorse reservoirs are 15-30% full. Streamflow forecasts dropped and call for 67% for the Bruneau River, 73% of average for Salmon Falls Creek and 79% for Oakley basin. These 50% Chance forecasts may even be optimistic because the cumulative drought effects on soil moisture, springs, wetlands and aquifers are hard to correlate with how dry the landscape is and the amount of snowmelt water that may reach the streams. Irrigation shortages will occur for Salmon Falls and Oakley reservoir water users, severity depends on how the remaining snow melts and future precipitation.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	APR-JUL	15.2	19.6	23	79	27	33	29
	APR-SEP	16.7	22	25	78	29	35	32
OAKLEY RESV STORAGE	APR-30	17.0	18.8	20	49	21	23	41
	MAY-31	13.6	17.4	20	44	23	26	45
	JUN-30	9.1	14.7	18.5	46	22	28	40
SALMON FALLS CREEK nr San Jacinto	APR-JUN	39	49	56	75	63	73	75
	APR-JUL	39	50	58	73	66	77	80
	APR-SEP	43	54	62	74	70	81	84
SALMON FALLS RESV STORAGE	APR-30	30	34	37	42	40	44	88
	MAY-31	37	45	51	51	57	65	101
BRUNEAU near Hot Spring	APR-JUL	83	114	137	67	163	204	205
	APR-SEP	88	120	144	67	171	214	215
OWYHEE near Gold Creek (2)	APR-JUL	7.6	12.4	16.3	65	21	28	25
OWYHEE nr Owyhee (2)	APR-JUL	18.0	38	52	63	66	86	82
OWYHEE near Rome	APR-JUL	128	180	220	58	265	338	380
OWYHEE RESV INFLOW (2)	APR-JUL	135	186	225	56	268	337	400
	APR-SEP	147	200	240	56	284	355	430
SUCCOR CK nr Jordan Valley	APR-JUL	4.2	8.0	10.6	88	13.2	17.4	12.1
SNAKE RIVER at King Hill (1,2)	APR-JUL	715	1372	1670	57	1970	2625	2940
SNAKE RIVER near Murphy (1,2)	APR-JUL	755	1439	1750	57	2060	2745	3090
SNAKE RIVER at Weiser (1,2)	APR-JUL	893	2094	2640	46	3185	4390	5770
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL	1306	2643	3250	50	3855	5190	6490
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	10684	14065	15600	72	17140	20520	21600

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	15.2	17.1	36.0
SALMON FALLS	182.6	26.7	19.3	70.2
WILDHORSE RESERVOIR	71.5	21.2	22.7	46.2
OWYHEE	715.0	387.2	198.8	593.0
BROWNLEE	1419.3	1097.0	1355.7	1029.5

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	201	106
Goose-Trapper Creeks	7	205	95
Salmon Falls Creek	8	151	76
Bruneau River	8	133	68
Owyhee Basin Total	20	146	71

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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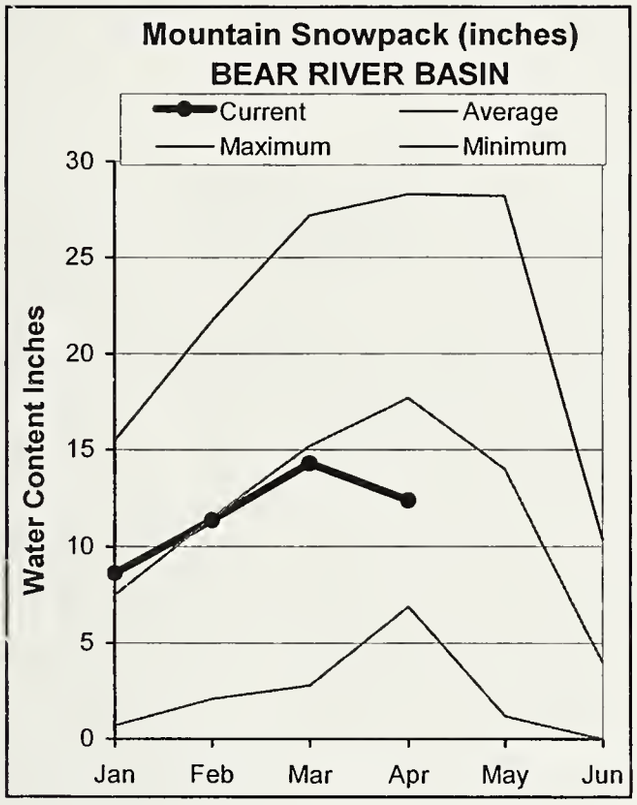
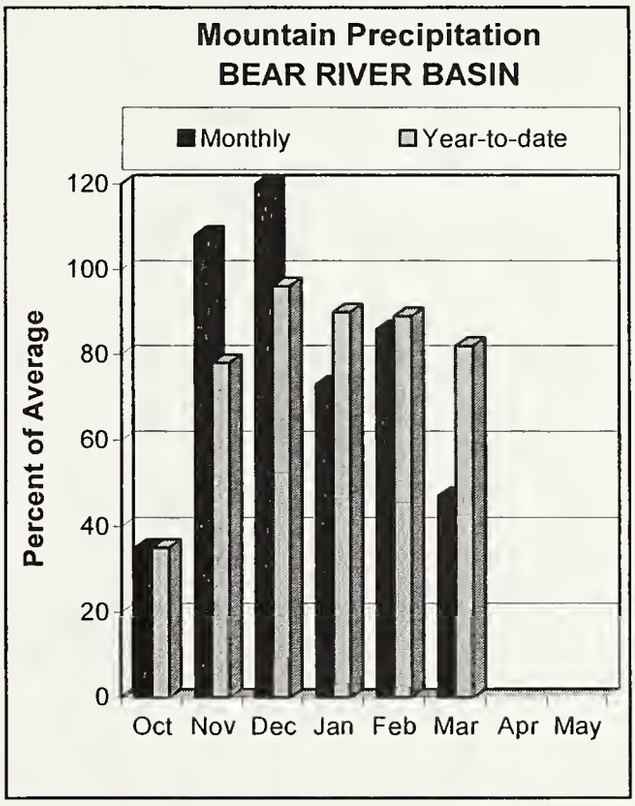
BEAR RIVER BASIN
APRIL 1, 2004





WATER SUPPLY OUTLOOK

The below average precipitation trend that started in January continued in March with precipitation at only 47% of average. Water year to date precipitation is 82% of average, about the same as last year. The snowpack decreased about 30 percentage points from last month and now ranges from 64% of average in Montpelier to 77% in Smiths and Thomas basins. Overall, the Bear River basin is 67% of average, slightly less than last year. As a result, streamflow will be similar or even less than last year because of the cumulative drought effects. Bear Lake water users will see the worst water supplies since the 1930s because Bear Lake is storing about 200,000 acre-feet less this year than last year. Montpelier Reservoir is 33% full, 76% of average and storing less water than last year. Streamflow forecasts call for 60% of average in Smiths Fork, 58% at Bear River near UT-WY state line, 34% at Bear River near Woodruff, and only 7% at Bear River at Stewart Dam. Actual runoff volumes will be less if future precipitation remains below normal this spring.

BEAR RIVER BASIN
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-SEP	31	47	58	46	69	85	125
Bear River ab Reservoir nr Woodruff	APR-SEP	24	30	34	24	51	77	142
Smiths Fork nr Border	APR-JUL	41	52	60	58	68	79	103
	APR-SEP	48	61	70	58	79	92	121
Bear River at Stewart Dam	APR-JUL	4.0	10.0	17.0	7	25	40	234
	APR-SEP	4.0	11.0	18.0	7	27	43	262

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	180.8	389.1	923.8
MONTPELIER CREEK	4.0	1.3	1.8	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - April 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	89	77
Bear River ab WY-ID line	14	86	64
Montpelier Creek	2	81	64
Mink Creek	4	113	68
Cub River	3	102	72
Bear River ab ID-UT line	25	95	67
Malad River	3	166	81

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 12/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

BOUNDARY CREEK NEAR PORTHILL, ID – No Corrections

MOYIE RIVER AT EASTPORT, ID – No Corrections

SMITH CREEK NEAR PORTHILL, ID – No Corrections

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
+ PRIEST LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

LOCHSA RIVER NR LOWELL - No Corrections

SELWAY RIVER NR LOWELL - No Corrections

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

CAMAS CREEK NEAR BLAINE – No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER

+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ SNAKE RIVER AT NEELEY
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR – No Corrections
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL

MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised January 2002)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	46.70	646.50	--	693.2	INACTIVE+ACTIVE
DEADWOOD	--	--	164.00	--	164.0	ACTIVE
ANDERSON RANCH	24.90	37.00	413.10	--	450.1	INACTIVE+ACTIVE
ARROWROCK	--	--	272.20	--	272.2	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	7.90	5.80	159.40	--	165.2	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflovv forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water
If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.
90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water
If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.
10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A **Field** *Office Guide* **for** *Interpreting Streamflow Forecasts" or visit our Web page.*

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